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Doula care supports near-universal breastfeeding initiation among diverse, low-income women

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Abstract

Introduction—In the United States breastfeeding initiation rates have risen in recent years. However, there are notable disparities by socioeconomic status and race/ethnicity. Previous research has suggested that care from a doula (a trained professional who provides non-medical support during the perinatal period) may increase breastfeeding initiation. The goal of this study was to study whether doula support may be associated with breastfeeding initiation among low-income, diverse women.

Methods—We compared breastfeeding initiation rates (mean values and 95% confidence intervals) for 1,069 women who received doula care from Everyday Miracles, a Minnesota-based organization that employs a diverse group of certified doulas, to a state-based sample of Medicaid-covered women who gave birth in 2009 or 2010 and participated in the Minnesota Pregnancy Risk Assessment Monitoring System (PRAMS) survey (weighted n=51,721).

Results—Women who had doula-supported births had near-universal breastfeeding initiation (97.9%), compared with 80.8% of the general Medicaid population. Among African-American women, 92.7% of those with doula support initiated breastfeeding, compared with 70.3% of the general Medicaid population.

Discussion—These results suggest that access to culturally-appropriate doula care may facilitate higher rates of breastfeeding initiation. When supported in their non-medical needs by birth doulas, the diverse, low-income patients of midwives and other maternity care providers may have a greater likelihood of initiating breastfeeding and experiencing the maternal and infant health benefits associated with breastfeeding.

Keywords

Doula; breastfeeding; Medicaid; low-income; racial/ethnic disparities

INTRODUCTION

There is extensive documentation of both maternal and infant benefits conferred by breastfeeding.[1] Current guidelines recommend breastfeeding exclusively for six months,

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with continued breastfeeding for a year or longer.[1] While breastfeeding initiation rates have risen in the United States in recent years, certain targets remain unmet for vulnerable subgroups of women. For example, while provisional data for 2009 indicates that the Healthy People 2010 goal of 75% of infants being ever breastfed was met overall,[2] previous research shows non-Hispanic black women, women of low socio-economic status, and WIC recipients all have below average rates of breastfeeding initiation and tend to breastfeed for shorter durations.[3-5] Barriers to breastfeeding among these groups include socio-economic and cultural reasons (including practical constraints associated with returning to work or school, limited or negative experiences of family or friends, a dearth of culturally-relevant sources of information and help, or lack of social or family support for breastfeeding), as well as individual reasons such as personal preferences, knowledge, and feelings about breastfeeding.[6,7]

The Baby-Friendly Hospital Initiative and Section 4207 of the Affordable Care Act are among efforts that highlight the recent increase in policy interventions designed to promote breastfeeding.[8,9] Additionally, growing attention has been paid to the importance of holistic care and multi-pronged interventions that include both medical and non-medical sources of support for breastfeeding and coordination of care for pregnant women who wish to breastfeed.[10] An important potential source of non-medical support for childbearing women is a doula, an individual trained to provide psychosocial and practical support during pregnancy, childbirth, and the postpartum period.[11] There is a limited but growing literature supporting the potential positive impacts of doula care on breastfeeding outcomes. One study that randomly assigned doula care to a sample of low-income women in northern California found no difference in breastfeeding initiation, but a higher prevalence of breastfeeding at six weeks among women who received doula care.[12] An evaluation of an urban hospital in Boston that provided culturally and linguistically concordant doula support for women giving birth found that women who received the doula services were had higher rates of early breastfeeding initiation.[13]

We aimed to contribute to the evidence base regarding interventions with the potential to both increase breastfeeding initiation and decrease racial/ethnic disparities by measuring breastfeeding behaviors among Medicaid beneficiaries in Minnesota who received care from a racially/ethnically-diverse doula program, compared with statewide breastfeeding outcomes for all Minnesota Medicaid recipients. The goal of this study was to document whether doula support is associated with breastfeeding initiation rates in a vulnerable population of diverse (predominantly racial/ethnic minority), low-income women (Medicaid recipients) who may face disproportionate barriers to breastfeeding.

METHODS

Setting

This analysis focuses on women with Medicaid coverage for childbirth, which, in Minnesota, includes those up to 275% of the Federal Poverty Level (FPL, $50,958 for a family of 4 in 2011).[14] We compared the general state Medicaid population with a group of Medicaid recipients who had access to culturally-appropriate care from trained doulas during the perinatal period through an organization called Everyday Miracles.

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Everyday Miracles is a Minnesota-based non-profit organization that aims to reduce health disparities by providing perinatal education and doula services to low-income women. The improvement of breastfeeding skills is one of their explicit objectives. Women receiving services from Everyday Miracles are referred through one of the state's largest Medicaid Managed Care organizations. The managed care organization provides a list of all enrolled pregnant women to Everyday Miracles, and a staff member attempts to contact each eligible woman via telephone to notify them of the availability of doula services. These services are covered by the Managed Care program as one of the options for childbirth education, although the doula services provided encompass more than just prenatal education and include continuous labor support, postpartum visits and breastfeeding education. During the study period, Everyday Miracles doulas provided support at the births of approximately 15-20% of all eligible Medicaid Managed Care enrollees. Reasons for choosing doula care over other childbirth education options most often included convenience, proximity, and the availability of culturally-relevant support. Everyday Miracles employs an ethnically diverse group of doulas (including Somali, Latina, Hmong and African-American doulas) and attempts to match doulas to clients based on language and ethnicity. All of the doulas employed by Everyday Miracles have been trained by the Doula Organization of North America (DONA) and are either certified or working toward certification.

Data and study population

Data for this analysis came from two sources: Everyday Miracles doula program and the Minnesota Pregnancy Risk Assessment Monitoring System (PRAMS). Everyday Miracles provided de-identified administrative data for clients who gave birth to a singleton baby between January 1, 2010 and April 30, 2012 (n=1,069). These data are collected in a childbirth report that is filed within one month of delivery. We compared the data from doula-supported births to a sample of Medicaid-covered births in the 2009-2010 Minnesota PRAMS data, which was made available to us through the Community and Family Health Division of the Minnesota Department of Health. States participating in PRAMS, which is overseen by the US Centers for Disease Control and Prevention, use state birth certificate files to sample 1,300 to 3,400 women each year who have recently had a live birth, and data collection begins 2 to 4 months after delivery.[15] In the Minnesota PRAMS data, women were classified as receiving Medicaid if they had were covered by any state-supported program, including Medicaid/Medical Assistance, Minnesota Care, or Minnesota Family Planning Program health insurance during delivery. The weighted sample size for Minnesota Medicaid-covered births during the years 2009 and 2010 was 51,721. The Minnesota PRAMS survey had a 70% response rate in 2009, and a 66% response rate in 2010, which is comparable to other state PRAMS surveys.[16]

Variable measurement and analysis

Race/ethnicity was based on maternal self-report in both data sources. Racial/ethnic categories included 1) White, 2) African-American (ie, US-born black), 3) African descent (ie, African-born black), 4) Hispanic, 5) Asian, 6) Native American, and 6) other. These categories were mutually exclusive in doula administrative data (women chose the category with which they most closely identified), but not in PRAMS data, where race and ethnicity

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were separately ascertained. Thus, racial/ethnic categories sum to more than 100% in PRAMS data.

Breastfeeding initiation was coded as a dichotomous variable, based on women's self-report in response to the PRAMS survey question: "Did you ever breastfeed or pump breast milk to feed your new baby, even for a short period of time" and based on the childbirth report prepared by Everyday Miracles doulas in which the doula documents early breastfeeding behavior for each client in collaboration with that client.

Using the key variables describe above, we calculated breastfeeding initiation rates (and 95% confidence intervals) among Minnesota Medicaid beneficiaries who received doula support from Everyday Miracles, both overall and by race/ethnicity, and compared these with the PRAMS-based state-level Medicaid estimates.

Data used in this analysis are de-identified existing records; the study was therefore granted exemption from review by the University of Minnesota Institutional Review Board (Study number 1202E10162).

RESULTS

The racial/ethnic composition of both samples is reported in Table 1. Larger proportions of women who received doula support were racial/ethnic minority women. In particular, there was a higher percentage of Hispanic women and those of African descent among the Everyday Miracles clients, compared with the general Minnesota Medicaid population.

Breastfeeding initiation was near-universal among women who had doula-supported births (Table 2). The overall initiation rate was 97.9%, compared with 80.8% in the Minnesota Medicaid sample. When stratified by race/ethnicity, our results indicate that breastfeeding initiation rates were higher for women who received doula care than for the general Medicaid population for every racial/ethnic subgroup. There was inadequate sample size to report breastfeeding initiation rates for Native American and Other race/ethnicity women in the doula data, and for Asian women in the Minnesota Medicaid sample (cell sizes less than 30 are not reported, consistent with Minnesota Department of Health policy). Among subgroups for which breastfeeding initiation rates could be calculated in both samples, African-American women had the lowest initiation rate in both; however, only 70.3% of African-American women initiated breastfeeding in the Medicaid sample, compared with 92.7% of African-American women who received doula care from Everyday Miracles. Breastfeeding initiation rates among white Medicaid beneficiaries with doula-support were 98.2%, compared with 78.7% of white Medicaid beneficiaries statewide. Over 99% of Hispanic women and African-born black women with doula support initiated breastfeeding, compared with initiation rates of 92% and 95%, respectively, in the general state Medicaid population.

DISCUSSION

Breastfeeding initiation was nearly universal among the low-income, diverse women in this study who received support from a doula group that emphasizes culturally-appropriate

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services. Prior research indicates lower breastfeeding initiation rates among non-Hispanic black women (51.5%, compared with a national average of 71.4% in 2001) as well as initiation rates below 70% for women with incomes less than 185% of FPL (compared with a 79.9% initiation rate for women above 350% FPL).[4] While low-income and African-American women typically have lower breastfeeding rates than the general population,[3-5] our results suggest that when these women have access to culturally-appropriate doula care, disparities are diminished, and universal breastfeeding initiation is a goal within reach. Breastfeeding initiation rates were very high (97.9%) among Medicaid recipients with doula support, regardless of racial/ethnic group. The most striking difference between the doula-supported births and the general Medicaid population was among African-American women, for whom the breastfeeding initiation rate was 22.4 percentage points higher for those who received doula support than among African-American Minnesota Medicaid recipients generally.

The higher rates of breastfeeding initiation among women supported by doulas may occur via direct or indirect means. The extensive training that certified doulas undergo includes a component dedicated to human lactation and breastfeeding support, and our findings are consistent with prior research indicating that women with doula support may initiate breastfeeding more frequently than those without such support.[13] Importantly, we show that this relationship between doula support and greater breastfeeding initiation is consistent across racial/ethnic subgroups. It is also possible that higher rates of breastfeeding initiation may be an indirect effect of lower cesarean rates among women with doula support, as delivery mode impacts early breastfeeding behaviors, and continuous labor support is associated with reduced cesarean rates.[17,18] We were not able to test this in our analysis because we did not have information on delivery mode for the state Medicaid sample.

Limitations of this analysis include potential selection bias based on Medicaid beneficiaries' choices to use doula services in lieu of traditional childbirth education and lack of data on whether PRAMS respondents may have received doula care. It is possible that those who selected doula care were more inclined toward breastfeeding, a bias that can only be eliminated by a randomized study. However, the Everyday Miracles clients were more racially/ethnically diverse than the general Minnesota Medicaid population (Table 1), and thus comprised a greater percentage of women who were statistically less likely to initiate breastfeeding, lending credence to our findings.

The data from PRAMS and Everyday Miracles were collected over different time periods. Everyday Miracles data were reported within one month of delivery, while PRAMS data were collected approximately 2 to 4 months following delivery. It is therefore possible that recall after a period of time may differentially affect PRAMS data; however due to the social desirability of breastfeeding behaviors, it is unclear which direction this bias might take. Also, the maternal efforts required for breastfeeding initiation make recall bias less likely in this case. In addition, inadequate sample size precluded comparisons for certain racial/ethnic subgroups, and there were slight differences in how race/ethnicity was categorized in the doula data (which were mutually exclusive) and PRAMS data (which allowed for both a racial and an ethnic designation). This could mean that African-American women of Hispanic ethnicity were categorized as African-American in the doula data and as both

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African-American and Hispanic in the PRAMS data. However, this is unlikely to significantly alter our results as breastfeeding initiation rates were higher among doula-supported births across all racial-ethnic groups.

We would have liked to include breastfeeding duration in our analysis, but this information was not consistently available across groups. Everyday Miracles conducts one-year follow up calls for all of its clients at which time breastfeeding duration is ascertained. At the time of data collection for this study (June-July 2012), breastfeeding duration data were only available for 112 (10.5%) of the women with doula-supported births who were included in this analysis, as a full year had not passed since the time of delivery for many women, and residential mobility and changes in contact information, common among low-income diverse women during the perinatal period, limited the ability to obtain follow-up data.

Enhancing access to care by trained doulas for pregnant Medicaid beneficiaries should be considered as a potential strategy to increase support for breastfeeding and to facilitate higher rates of initiation in this population. Ensuring culturally relevant care and racial/ethnic concordance between doulas and their clients may enhance the potential efficacy of such support. Should such efforts be adopted, rigorous assessment of policy impacts would necessitate systematic data collection for both breastfeeding (including standardized measures) and doula care (ie, inclusion in routinely collected data, such as birth certificates or surveys like PRAMS). Future research should also examine the role that doula support may play in breastfeeding duration among vulnerable women and the potential impacts of facilitating financial access (via health insurance coverage) to culturally appropriate, trained doula services for low-income women who might not otherwise have access to this type of care.

Our findings reinforce the positive potential role for interprofessional care and support for pregnant women.[19] Midwives and other maternity care providers are uniquely situated to support women in achieving their breastfeeding goals and to work in partnership across traditional professional boundaries to meet women's needs,[20] and such practice is consistent with the broader movement toward more collaborative maternity care.[21] Additionally, these results indicate the potential role for non-medical doula services as a complement to the medical care provided by midwives and other clinicians at the time of childbirth and throughout the perinatal period. When supported in their non-medical needs by trained birth doulas, the diverse, low-income patients of midwives and other maternity care providers may have a greater chance of initiating breastfeeding and experiencing the maternal and infant health benefits associated with breastfeeding.

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Biography

Biographical sketches: Katy Backes Kozhimannil, PhD, MPA, is an Assistant Professor in the Division of Health Policy and Management at the University of Minnesota's School of Public Health. Laura B. Attanasio, BA, and Rachel R. Hardeman, MPH, are doctoral students in the Division of Health Policy and Management at the University of Minnesota's School of Public Health. Michelle O'Brien, MD, MPH is a certified lactation consultant and family physician in private practice; Dr. O'Brien is also an adjunct faculty member in the Department of Family Medicine and Community Health at the University of Minnesota Medical School.

References

1. Eidelman AI, Schanler RJ, Johnston M, et al. Breastfeeding and the Use of Human Milk. Pediatrics. 2012; 129(3):e827–e841. [PubMed: 22371471]
2. [Accessed August 25, 2012] Breastfeeding. http://www.cdc.gov/breastfeeding/data/nis_data/
3. Jones JR, Kogan MD, Singh GK, Dee DL. Grummer-Strawn LM. Factors Associated With Exclusive Breastfeeding in the United States. Pediatrics. 2011; 128(6):1117–1125. [PubMed: 22123898]
4. Li R, Darling N, Maurice E, Barker L, Grummer-Strawn LM. Breastfeeding rates in the United States by characteristics of the child, mother, or family: the 2002 National Immunization Survey. Pediatrics. 2005; 115(1):e31–e37. [PubMed: 15579667]
5. Forste R, Hoffmann JP. Are US mothers meeting the Healthy People 2010 breastfeeding targets for initiation, duration, and exclusivity? The 2003 and 2004 National Immunization Surveys. J Hum Lact. 2008; 24(3):278–288. [PubMed: 18689715]
6. Ogbuanu CA, Probst J, Laditka SB, Liu J, Baek JD, Glover S. Reasons why women do not initiate breastfeeding: a southeastern state study. Womens Health Issues. 2009; 19(4):268–278. [PubMed: 19589476]
7. Khoury AJ, Moazzem SW, Jarjoura CM, Carothers C, Hinton A. Breast-feeding initiation in low-income women: role of attitudes, support, and perceived control. Womens Health Issues. 2005; 15(2):64–72. [PubMed: 15767196]
8. Drago, R.; Hayes, J.; Yi, Y. Better Health for Mothers and Children: Breastfeeding Accommodations under the Affordable Care Act: Citeseer. 2010.
9. [Accessed January 3, 2012] BFHI USA: Implementing the UNICEF/WHO Baby Friendly Hospital Initiative in the U.S.. http://www.babyfriendlyusa.org/eng/01.html
10. Forster DA, McLachlan HL. Breastfeeding Initiation and Birth Setting Practices: A Review of the Literature. J Midwifery Women's Health. 2007; 52(3):273–280. [PubMed: 17467594]
11. DONA. http://www.dona.org/
12. Nommsen-Rivers LA, Mastergeorge AM, Hansen RL, Cullum AS, Dewey KG. Doula Care, Early Breastfeeding Outcomes, and Breastfeeding Status at 6 Weeks Postpartum Among Low-Income Primiparae. J Obstet Gynecol Neonatal Nurs. 2009; 38(2):157–173.
13. Mottl-Santiago J, Walker C, Ewan J, Vragovic O, Winder S, Stubblefield P. A hospital-based doula program and childbirth outcomes in an urban, multicultural setting. Matern Child Health J. 2008; 12(3):372–377. [PubMed: 17610053]

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14. [Accessed October 19, 2012] Income Eligibility Limits for Pregnant Women as a Percent of Federal Poverty Level (FPL). statehealthfacts.org. Jan. 2012 http://www.statehealthfacts.org/comparereport.jsp?rep=77&cat=4
15. [Accessed August 8, 2012] PRAMS Methodology. http://www.cdc.gov/prams/Methodology.htm
16. Minnesota PRAMS (Pregnancy Risk Assessment Monitoring System). [Accessed August 15, 2012] http://www.health.state.mn.us/divs/cfh/prams/
17. Declercq E, Labbok MH, Sakala C, O'Hara MA. Hospital practices and women's likelihood of fulfilling their intention to exclusively breastfeed. Am J Public Health. 2009; 99(5):929. [PubMed: 19299680]
18. Hodnett ED, Gates S, Hofmeyr GJ, Sakala C, Weston J. Continuous support for women during childbirth. Cochrane Database Syst Rev. 2011; 2
19. Saxell L, Harris S, Elarar L. The Collaboration for Maternal and Newborn Health: Interprofessional Maternity Care Education for Medical, Midwifery, and Nursing Students. Journal Midwifery Womens Health. 2009; 54(4):314–320.
20. Raisler J. Midwives Helping Mothers to Breastfeed: Food for Thought and Action. Journal Midwifery Womens Health. 2000; 45(3):202–204.
21. Downe S, Finlayson K, Fleming A. Creating a Collaborative Culture in Maternity Care. Journal Midwifery Womens Health. 2010; 55(3):250–254.

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Quick Points

- While breastfeeding rates are rising among US mothers, there are racial/ethnic and income-based disparities.
- This study compared breastfeeding initiation rates among diverse Medicaid beneficiaries with doula-supported births to a statewide sample of Medicaid beneficiaries.
- Breastfeeding initiation was near-universal among the doula-supported births studied (97.9%).
- Among African-American Medicaid beneficiaries, 92.7% of those with doula support initiated breastfeeding, compared with 70.3% of the general population.
- These results suggest that access to culturally-appropriate doula care may facilitate higher rates of breastfeeding initiation among vulnerable populations.

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Table 1

Distribution of race/ethnicity in study samples.

	Minnesota Medicaid recipients with doula support (Everyday Miracles)	Minnesota Medicaid Births (Minnesota PRAMS)
N	**1,069**	**51,721[a]**
	%	**%**
White	10.1	57.8
African American	10.3	9.3
African descent	36.3	8.9
Hispanic	36.5	14.5
Asian	5.5	0.5
Native American	1.0	14.5
Other	0.3	5.8

PRAMS: Pregnancy Risk Assessment Monitoring System

[a]Weighted by PRAMS to be representative of the Minnesota population.

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Table 2

Breastfeeding initiation in study sample by race/ethnicity.

	Breastfeeding initiation	
	Minnesota Medicaid recipients with doula support (Everyday Miracles)	**Minnesota Medicaid Births (Minnesota PRAMS)**
N	**1,069**	**51,721** [a]
Race/Ethnicity	**Percent (95% CI)**	**Percent (95% CI)**
White	98.2 (95.6-100.0)	78.7 (74.5-82.4)
African American	92.7 (87.8-97.7)	70.3 (64.5-75.5)
African descent	99.5 (98.8-100.0)	95.2 (82.4-98.8)
Hispanic	99.2 (98.4-100.0)	92.0 (85.5-95.8)
Asian	86.4 (77.4-95.4)	NR
Native American	NR	66.1 (59.3-72.2)
Other	NR	76.4 (61.4-86.9)
Total	97.9 (97.0-98.7)	80.8 (78.0-83.3)

PRAMS: Pregnancy Risk Assessment Monitoring System; CI: confidence interval; NR: not reported (cell sizes under 30 are not reported)

[a] Weighted by PRAMS to be representative of the Minnesota population.